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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/405,299	09/23/1999	RANDALL S. ALBERTE	CEA-005.01	9329

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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 12/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/405,299

Applicant(s)

ALBERTE ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 71-73, 75-78 and 104-106 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 71-73, 75-78 and 104-106 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. This Office action is in response to applicant's amendment received October 11, 2005, which cancels claims 34-58, 65-70, 74 and 79-103, amends claims 71 and 75, and adds claims 104-106.

Claims 71-73, 75-78 and 104-106 are pending.

2. This Office action is in response to the Rule 132 Declaration of Randall S. Alberte received October 11, 2005.

3. The examiner notes that various changes indicated in claims 71 and 75 do not represent changes relative to the most recent previous version of these claims. Claims 71 and 75 are shown as amending the definitions of X and Y, but the indicated changes were made in the amendment received November 08, 2004. The deletion of R and its definition was also done in the November 08th amendment, and six of the eight terms shown as deleted in the definition of Z were deleted in the November 08th amendment.

4. The objection to the disclosure for informalities, as set forth in the Office action mailed April 06, 2005, is withdrawn since it is not necessary to know the meaning of the abbreviations PPCS, BPCS, TPPCS and BTCS in order to interpret the claims.

5. Claims 71-73, 75-78 and 104-106 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The application as originally filed provides insufficient support for the composition of the coating as set forth in the added text of the last two lines of claim 71 and the corresponding text in claim 75.

Applicant points to the original application, including original claims, for support. Applicant points, in particular, to page 15, lines 7-15 and the examples. Lines 7-15 of page 15 pertain to materials that can be used to encapsulate an anti-fouling compound when the compound is microencapsulated. The present claims are silent with respect to microencapsulation, and encompass compositions in which the anti-fouling compound is mixed with/dispersed in/dissolved in at least one of the recited materials. As such, the present claims are not fully supported by the application as originally filed.

6. Claims 71-73, 75-78 and 104-106 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for specific coatings demonstrated by the examples to have anti-fouling capabilities as required by the present claims, does not reasonably provide enablement for a coating of the scope as claimed in present claims 71, 75 and dependents wherein the terms "plant surface" and "coating" encompass numerous structures/

compositions, the term “anti-fouling” encompasses a variety of possible modes of action against numerous possible organisms, and the general structure for the compound as defined in the independent claims and some of the dependent claims encompasses numerous compounds. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

As taught on page 1 of the specification, there are more than 50,000 species of fungi, of which more than 10,000 species of fungi cause disease in plants.

As taught on page 5 of the specification, the exact mechanism of action is not known but studies indicate that the sulfate group of the compound plays a role.

As limited by the present claims, the term “coating” encompasses any liquid or solid comprising water, an organic polymer, lipid, fat, carbohydrate, wax, inorganic oxide or silicone polymer, and comprising a compound of general structure 2 or 3.

As taught on page 9 of the specification, an “effective amount” is an amount of antifouling compound that reduces the number of organisms that attach to a defined surface of a plant or plant component relative to the number that attach to an untreated surface.

As taught on page 11 of the specification, “plant” refers to any member of the plant kingdom, at any stage of its life cycle from seed to mature plant, and “plant component” refers to any portion or part of a plant.

As taught on page 11 of the specification, “plant pathogen” encompasses bacteria, virus, protist, algae or fungi that infect plants or plant components.

The compounds as defined in the present independent claims and some of the dependent claims encompass numerous compounds. (Present claim 73 is the most limited of the claims with respect to the identity of the anti-fouling compound. Structure 2 as defined in claim 73 encompasses 72 compounds.)

Accordingly, the present claims encompass any liquid or solid that comprises at least one compound selected from the numerous compounds encompassed by general structure 2 or 3, and that comprises water, an organic polymer, lipid, fat, carbohydrate, wax, inorganic oxide or silicone polymer, that, if applied to an unspecified member of the plant kingdom at an unspecified stage in its life cycle, would be capable of reducing the number of organisms attached to the plant or plant component relative to an untreated control, wherein the organisms to be reduced are selected from bacteria, viruses, protist, algae or fungi that infect plants or plant components.

The present specification provides data pertaining to the use of seven compounds: methyl sulfate, octyl sulfate, zosteric acid, PPCS, BPCS, TPPCS and BTCS. Methyl sulfate, octyl sulfate and zosteric acid do not meet the limitations of the anti-fouling compound required for any of the present claims. The exact identity of PPCS, BPCS, TPPCS and BTCS is not clear so it is not certain if any of these four compounds are within the scope of structure 2 and/or structure 3 but, based on applicant's arguments set forth in the third paragraph on page 15 of amendment received November 08, 2004, PPCS, BPCS and TPPCS are within the scope of compounds of structures 2 and 3, and BTCS is within the scope of a compound of structure 3. Presuming the argued meanings of these abbreviations are correct, it is not clear that the anti-

fouling activity of the tested compounds that are within the scope of the present claims is representative of all coatings encompassed by the present claims, or that the full scope of coatings encompassed by these claims can be determined without undue experimentation based on these examples.

As is apparent from the background discussion on page 1 of the specification, there is a lack of predictability in the art of anti-fouling materials for plants. The limited data presented in the specification are insufficient to demonstrate any predictability with respect to how each of the numerous compounds encompassed by general structure 2 or 3 would function in an anti-fouling capacity against any one of thousands of possible plant pathogens (fungi alone presenting over 10,000 possibilities) if used on any one of the numerous possibilities selected from members of the plant kingdom at any stage in the life cycle. Accordingly, it is the examiner's position that it would require undue experimentation on the part of one of ordinary skill in the art at the time of the invention to make and use the invention commensurate in scope with the present claims.

7. Applicant's arguments filed October 11, 2005 have been fully considered, along with the Rule 132 declaration of Randall S. Alberte filed October 11, 2005, but they are not persuasive.

The examiner has considered the data presented in the original disclosure, the data presented in the Rule 132 declaration, and applicant's arguments.

It is not clear from the Rule 132 declaration whether the data presented in the declaration pertain to tests carried out by the declarant and/or under the declarant's supervision, and does not

indicate when the tests were conducted. It is not clear that the declaration pertains to what one skilled in the art knew at the time of the filing of the application.

The exact compositions of the coatings tested in the declaration are also not specified. It is not clear why there are two different sets of data for each of the five FendoffTM series compounds in the table on page 4 of the declaration; does each data set represent a different composition? Any trends that might be useful in predicting, for example, different coating compositions that comprise an effective amount of an anti-fouling compound are not readily apparent from the declaration.

Applicant must demonstrate by argument and/or evidence that the disclosure, as filed, would have enabled the claimed invention for one skilled in the art at the time of the invention. While applicant may provide a declaration demonstrating that the claimed invention works, the experiments of the declaration must have used the guidance in the specification as filed and what was well known to one of skill in the art, and must bear a reasonable correlation to the scope of the claimed invention.

The claims have been narrowed with respect to the scope of compounds covered by general structure 2 or 3, and have been narrowed with respect to the composition of the coating. However, general structures 2 and 3 as defined in the independent claims still cover a large variety of compounds (even general structure 2 as further defined in claim 73 covers 72 compounds), and the additional coating ingredient(s) as defined by the last two lines of claim 71 and the corresponding terminology in claim 75 provides for a wide variety of materials.

The limited number of examples set forth in the specification are insufficient to demonstrate that the anti-fouling capabilities of the various compounds towards the numerous organisms which might foul a plant surface are sufficiently predictable such that undue experimentation would not be required to make and use the full scope of coatings encompassed by the present claims.

Likewise, the data presented in the declaration is not considered to bear a reasonable correlation to the scope of the claimed invention. For example, the eight compounds tested are compounds of general structure 2 or 3 wherein Y is O. There is no evidence of record to demonstrate that one of ordinary skill in the art at the time of the invention would expect the corresponding compounds in which Y is S or Se to have the same properties. Further the eight compounds tested are compounds of general structure 2 or 3 wherein Z is an alkyphenyl or phenylalkylphenyl group, and represent only a small subset of compounds within the scope of the present claims.

Applicant argues that it is the $-YS(O)_2X$ moiety that imparts the anti-fouling properties to the coating, and compounds having this moiety can tolerate a wide variety of Z moieties and still be effective at preventing biofouling. However, the data presented in the specification and the declaration demonstrate that relatively small changes in the Z moiety have an impact on anti-fouling capabilities. There is no evidence of record to demonstrate the effect that one might expect/predict for Z moieties other than those for which data is presented.

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8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY
December 20, 2005


MARIE YAMNITZKY
PRIMARY EXAMINER
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